

AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently amended) A connection apparatus for a public network switching system, the switching system having a first plurality of line ports to which a plurality of user terminals are connected, a second plurality of line ports, a first plurality of trunk ports to which a plurality of Internet lines are connected, and a second plurality of trunk ports, the apparatus comprising:

a switching unit having a plurality of diverging ports adapted for connection to said second plurality of trunk ports and a plurality of converging ports adapted for connection to said second plurality of line ports; and

a control unit responsive to a request signal from one of said user terminals for establishing in said switching unit at least one connection specified by said request signal between one of said diverging ports and at least one of said converging ports,

wherein said public network switching system establishes ~~establishing~~ a connection between said one diverging port and said one user terminal and at least one connection between said second plurality of line ports and said first plurality of trunk ports corresponding in number to said at least one connection established in said switching unit.

Claim 2. (Canceled).

Claim 3. (Previously presented) The connection apparatus of claim 1, wherein each of said plurality of converging ports includes a multiplexer for multiplexing a plurality of user signals into a signal for transmission to one of said Internet lines.

Claim 4. (Previously presented) The connection apparatus of claim 3, wherein each of said plurality of converging ports further includes a demultiplexer for demultiplexing a signal from said one Internet line into a plurality of signals for application to said diverging ports.

Claim 5. (Original) The connection apparatus of claim 3, wherein said multiplexer is configured to operate in a TCP/IP protocol mode.

Claim 6. (Original) The connection apparatus of claim 4, wherein said demultiplexer is configured to operate in a TCP/IP protocol mode.

Claims 7 and 8. (Canceled).

Claim 9. (Previously presented) The connection apparatus of claim 3, wherein each of said plurality of diverging ports includes a first line interface unit for interfacing the switching unit to said switching system and each of said converging ports further includes a second line interface unit for interfacing the multiplexer to said one Internet line.

Claim 10. (Currently amended) The connection apparatus of claim 9, wherein said second line interface unit is in compliance with the communication protocol and transmission speed of one of said user terminals.

Claim 11. (Currently amended) The connection apparatus of claim 9, wherein each of said plurality of converging ports further includes a demultiplexer for demultiplexing a signal from said one Internet line into a plurality of signals for application to said diverging ports

and wherein said second line interface unit is configured to interface the demultiplexer to said one Internet line.

Claim 12. (Currently amended) The connection apparatus of claim 1, wherein said control unit comprises:

a phone number memory for storing a plurality of phone numbers; and
a processor for determining whether a phone number contained in said request signal coincides with one of said phone numbers stored in said phone number memory and establishing said at least one connection in said switching unit ~~said set of branch connections~~ if the phone number coincides with one of the stored phone numbers.

Claim 13. (Currently amended) The connection apparatus of claim 12, wherein said control unit further comprises an ID and password ~~ID/password~~ memory for storing a plurality of user identifiers and user passwords, and wherein said processor is configured to:

determine whether a user identifier and a user password contained in said request signal coincide with one of the user identifiers and one of the user passwords stored in said ID and password ~~ID/password~~ memory if the phone number contained in said request signal does not coincide with any of the stored phone numbers, and

establish said at least one connection in said switching unit ~~said set of branch connections~~ if the user identifier and the user password contained in the request signal coincide with one of the stored user identifiers and one of the stored user passwords.

Claim 14. (Currently amended) The connection apparatus of claim 13, wherein said processor is configured to:

determine whether the phone number contained in said request signal coincides with a phone number which is denied access to the Internet lines, and

establish said at least one connection in said switching unit ~~said set of branch connections~~ if the phone number contained in said request signal does not coincide with said phone number which is denied access to the Internet lines.

Claim 15. (Currently amended) A connection apparatus for a public network switching system which serves user terminals via a plurality of ADSL (asymmetric digital subscriber line) modems, said switching system having a first plurality of line ports to which said ADSL modems are connected, a second plurality of line ports, a first plurality of trunk ports to which a plurality of Internet lines are connected, and a second plurality of trunk ports, the apparatus comprising:

a switching unit having a first plurality of diverging ports adapted for connection to said second plurality of trunk ports, a second plurality of diverging ports adapted for connection to said ADSL modems, and a plurality of converging ports adapted for connection to said second plurality of line ports; and

a control unit responsive to a request signal from one of said ADSL modems for establishing in said switching unit at least one first connection between one of said first plurality of diverging ports and at least one of said converging ports specified by said request signal and at least one second connection between one of said second plurality of diverging ports and said at least one of said converging ports,

wherein said public network switching system establishes ~~establishing~~ a connection between said one ADSL modem and said one of said first plurality of diverging ports and at least one connection between said second plurality of line ports and said first plurality of

trunk ports corresponding to said at least one first connection established in said switching unit.

Claim 16. (Canceled).

Claim 17. (Previously presented) A communication system comprising:

a public network switching system having a first plurality of line ports to which a plurality of user terminals are connected, and a first plurality of trunk ports to which a plurality of Internet lines are connected, and a second plurality of trunk ports;

a switching unit having a plurality of diverging ports connected to said second plurality of trunk ports and a plurality of converging ports connected to a second plurality of line ports ; and

a control unit responsive to a request signal from one of said user terminals for establishing in said switching unit at least one connection specified by said request signal between one of said diverging ports and at least one of said converging ports,

said public network switching system establishing a connection between said one diverging port and said one user terminal, and at least one connection between said second plurality of line ports and said first plurality of trunk ports corresponding to said at least one connection established in said switching unit.

Claim 18. (Canceled).

Claim 19. (Previously presented) A communication system comprising:

a plurality of ADSL (asymmetric digital subscriber line) modems;

a public network switching system having a first plurality of line ports to which said ADSL modems are connected, a second plurality of line ports, a first plurality of trunk ports to which a plurality of Internet lines are connected, and a second plurality of trunk ports;

a switching unit having a first plurality of diverging ports connected to said second plurality of trunk ports, a second plurality of diverging ports connected to said ADSL modems, and a plurality of converging ports connected to said second plurality of line ports; and

a control unit responsive to a request signal from one of said ADSL modems for establishing in said switching unit at least one first connection between one of said first plurality of diverging ports and at least one of said converging ports specified by said request signal and at least one second connection between one of said second plurality of diverging ports and said at least one of said number of said converging ports,

said public network switching system establishing a connection between said one ADSL modem and said one of said first plurality of diverging ports and at least one connection between said second plurality of line ports and said first plurality of trunk ports corresponding to said at least one first connection established in said switching unit.

Claim 20. (Canceled).

Claim 21. (Currently amended) A method of communication for a public network switching system by using a switching unit, said public network switching system having a first and second plurality of line ports, and a first ~~frs~~ and second plurality of trunk ports, and said switching unit having a plurality of diverging ports and a plurality of converging ports, wherein a plurality of user terminals are connected to said first plurality of line ports and a

plurality of Internet lines connected to said first plurality of trunk ports, the method comprising:

connecting said plurality of diverging ports to said second plurality of trunk ports;
connecting said plurality of converging ports to said second plurality of line ports;
receiving a request signal from one of said user terminals via one of said first plurality of line ports;

establishing, in said public network switching system, a connection between said one of said first plurality of line ports and one of said second plurality of trunk ports and at least one connection specified by said request signal between said second plurality of line ports and said first plurality of trunk ports; and

establishing, in said switching unit, at least one connection between one of said diverging ports and at least one of said converging ports corresponding to said at least one connection established in said public network switching system, said one of said diverging ports being connected to said one of said second plurality of trunk ports.

Claim 22. (New) The apparatus of claim 1, wherein the control unit establishes a number of connections in said switching unit between one of said diverging ports in communication with said user terminal and a number of converging ports.

Claim 23. (New) The apparatus of claim 22, wherein the number of connections in said switching unit is based upon a number of Internet lines specified by said request signal.

Claim 24. (New) A control unit for a public network switching system, the switching system having a first plurality of line ports to which a plurality of user terminals are

connected, a second plurality of line ports, a first plurality of trunk ports to which a plurality of Internet lines are connected, and a second plurality of trunk ports and having a switching unit having a plurality of diverging ports adapted for connection to said second plurality of trunk ports and a plurality of converging ports adapted for connection to said second plurality of line ports, the control unit comprising:

a phone number memory for storing a plurality of phone numbers; and

a processor for determining whether a phone number contained in a request signal coincides with one of said phone numbers stored in said phone number memory and establishing at least one connection in a switching unit if the phone number coincides with one of the stored phone numbers,

wherein the public network switching system establishes a connection between said one diverging port and said one user terminal and at least one connection between said second plurality of line ports and said first plurality of trunk ports corresponding in number to said at least one connection established in said switching unit.